

The Status of Water Quality in Arizona – 2002

Volume I. Arizona's Integrated 305(b) Assessment and 303(d) Listing Report



Approved by:

Karen L. Smith, Director Water Quality Division

Linda Taunt, Hydrologic Support and Assessment Section Manager

Susan Ward, Watershed Management Unit Manager

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Prepared by:
Diana Marsh

Editing and assistance: Nancy LaMascus, Steve Pawlowski, Kris Randall, and Linda Taunt

Graphic assistance: Lisa Rowe and Danese Cameron

Database assistance: Chris Conneran, and Eileen McMullen

Groundwater analysis: Doug Towne

Surface water assessments: Mathew Barry, Julie Collins, Max Enterline, Cheri Horsley, Robert Mills, and Jeffrey Servoss

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Elizabeth Boettcher, Susan Fitch, Rebecca Followill, Jennifer Hickman, Lee Johnson, Sara Konrad, Lin Lawson, Angela Lucci, Doug McCarty, Chris Notgrass, Kyle Palmer, Matt Oller, Greg Olsen, Samuel Rector, Amanda Ryan, Robert Scalamera, Patti Spindler, Doug Towne, and R. Scott Williams

Arizona Department of Environmental Quality
1100 West Jefferson Street
Phoenix, Arizona 85007
(602) 771-2300
In Arizona 1-800-234-5677
TTD (602) 771-4829

Further Monitoring, Assessment, and TMDL Information

ADEQ's Web Site – Current information about programs and status of many projects can be downloaded from ADEQ's Web Site: <http://www.adeq.az.us>

ADEQ's Programs -- Further information about water quality ambient monitoring data, standards, and assessments can be obtained by contacting the following ADEQ program staff:

Assessments: Diana Marsh (602) 771-4545
Bioassessment: Patti Spindler (602) 771-4543
Lakes monitoring: Susan Fitch (602) 771-4541
Fish advisories: Sam Rector (602) 771-4536
GIS coverages: Victor Gass (602) 771-4517
Ground water monitoring (ambient): Doug Towne (602) 771-4412
Ground water data retrievals: Marianne Gilbert (602) 771-4563
Nonpoint Source Program: Kris Randall (602) 771-4509
NPDES (AZPDES) & federal certifications: Chris Vargas (602) 771-4665
Surface water monitoring: Steve Pawlowski (602) 771-4219
Surface water standards: Steve Pawlowski (602) 771-4219
Pesticides: Wang Yu (602) 771-4552
Priority pollutants and toxic substances: Sam Rector (602) 771-4536
TMDL Program: Nancy LaMascus (602) 771-4468
208 Planning: Edwina Vogan (602) 771-4606
Water Quality Improvement Grants Program: Sandy Sutton (602) 771-4635
Watershed Management Program: Kris Randall (602) 771-4509

A more comprehensive list of water quality protection programs is provided in the final appendix of this report (**Appendix E**).

Other Agencies -- Data was also obtained from a variety of sources outside the agency. Contact the following agencies to obtain further information about their monitoring programs or copies of their data:

Arizona Department of Water Resources - Basic Data (602) 417-2457
Arizona Game and Fish Department (602) 789-3260
Urban Lakes Program (602) 789-3268
Arizona State Parks
Slide Rock State Park (520) 639-2962
Environmental Protection Agency Region IX (San Francisco)
303(d) and TMDL's (415) 972-3416 (Dave Smith)
305(b) Assessments (415) 972-3462 (Terry Fleming)
Standards Development (415) 972-3498 (Gary Wolinsky)
Nonpoint Source (415) 972-3444 (Ephraim Leon-Guerrero)
Mohave County Health Department (Lake Havasu) (520) 453-0712
National Parks Service
Glen Canyon National Recreation Area (520) 608-6377
Grand Canyon National Park (520) 638-7905 (John Rihs)
Salt River Project (602) 236-5900 (Greg Elliott)
Southern Nevada Water Authority (702) 258-3948 (Jeff Johnson)
US Army Corps of Engineers (213) 452-3529 (Robert Stewart)
US Bureau of Land Management/Phoenix (602) 580-5500 (Jim Renthall)
US Bureau of Reclamation
Colorado Grand Canyon (520) 556-7051
Upper Colorado Region (801) 524-3700 (Jerry Miller)
Lake Powell (928) 608-6377 (Mark Anderson)
US Fish and Wildlife Service (602) 640-2720 (Kirke King)
US Forest Service
Apache-Sitgreaves National Forest (928) 333-4301
Coconino National Forest (520) 527-3600
Coronado National Forest (520) 670-4552 (Robert Lafevre)
Kaibab National Forest (928) 635-8200 (Dave Brewer)
Prescott National Forest (928) 567-4121 (Michelle Girard)
Tonto National Forest (602) 225-5200 (Grant Loomis)
US Geological Survey (480) 379-3087 (Cheryl Partin)
NAWQA (520) 670-6135 (x223) (Gail Cordy)

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I. Arizona's 2002 Integrated Assessment and Listing Process

Why do we write this report?

This biennial report consolidates reporting requirements under the federal Clean Water Act sections 305(b) (assessments), 303(d) ("impaired" waters list), 106 (monitoring), 204 (grants), 319 (nonpoint source), and 314 (lakes program). It incorporates recommendations made in the Environmental Protection Agency's (EPA) 2002 *Integrated Water Quality Monitoring and Assessment Report Guidance* issued in November 2001. This report also provides information required in Arizona's new state statute (Arizona Revised Statute 49-231 through 49-238) and new state Impaired Waters Identification rules (Arizona Administrative Code R11-18-601 through 606).

In addition, Arizona Department of Environmental Quality (ADEQ) recognizes that this report can provide many state and federal agencies, organizations, and interested parties with a current reference document on the status of surface and ground water quality in Arizona. The following objectives are fulfilled by the publication of this water quality assessment report:

- C Report on statewide surface and ground water quality in Arizona (excluding tribal lands);
- Identify and delineate all surface waters assessed;
- C Identify the status of designated use support for individual surface waters based on numeric or narrative water quality standards;
- Document the basis for ground water and surface water assessment determinations;
- C Identify pollutants or water quality characteristics that cause impairment;
- Identify possible sources of identified pollutants;
- Indicate where standards are exceeded solely due to natural conditions;
- Describe the state's monitoring program and progress toward achieving comprehensive assessments for all surface waters;
- C Identify where additional monitoring may be needed to complete assessments (new Planning List) or support the development of Total Maximum Daily Load (TMDL) analyses, including a schedule for this monitoring;
- Identify and prioritize where additional TMDLs need to be completed;
- Provide opportunity for public review and respond to comments concerning assessments and the state's 303(d) listing proposals;
- C Provide information to the public and other agencies regarding:

- ADEQ's ongoing water quality improvement activities;
- Regulatory programs to protect and improve water quality; and
- Available water quality data and related studies in Arizona.

This report was written to be understandable for both technical and nontechnical audiences. Technical terms, acronyms, and abbreviations used in this document are defined in **Appendix A**. Additional appendices in Volume I and monitoring tables in Volume II contain more detailed information referenced by technical staff.

Status of new federal regulations and guidance.

New Federal Regulations -- The new federal regulations pertaining to listing impaired waters and completing TMDLs, scheduled to go into effect in October 2001, have been deferred by EPA, and were not used in this assessment.

New Federal Guidance -- In November 2001, EPA issued "2002 Integrated Water Quality Monitoring and Assessment Report Guidance" concerning the development and submission of the 2002 305(b) water quality report and the 303(d) List of impaired waters. This guidance recommended that states submit an integrated water quality assessment report that included the state's 303(d) listed waters. **Table 1** indicates the information EPA requested, and where this information can be found in this report.

Table 1. EPA Requested Data or Information

Data or Information Requested	Data or Information Provided in This Report
Geographic delineations of each surface water assessed based on the new National Hydrography Dataset	Arizona is providing a GIS coverage which is compatible with and can be converted to the National Hydrography Dataset.
Status of and progress toward achieving comprehensive assessments of all waters.	Chapter IV provides statewide status of surface water quality assessments and Chapter VI provides an overview of ground water quality assessments. Chapter VII describes how ADEQ's monitoring programs are being modified to achieve more comprehensive assessments.
Water quality standard attainment determinations for each surface water assessed.	Volume II provides detailed monitoring tables for each surface water assessed arranged by watershed. These tables clearly indicate the basis for each assessment. Individual surface water quality assessments are provided in Volume I, Chapter V.
Identify additional monitoring that may be needed to determine water quality standard attainment status and, if necessary, to support development of TMDLs.	The assessment table in Chapter V indicates whether a surface water will be on the Planning List or TMDL list and the pollutant(s) of concern. Monitoring activities are being developed based on this table.
Schedules for additional monitoring planned for each surface water assessed.	Chapter VII describes ADEQ's monitoring programs, how these programs are integrated within the agency and with other agencies, and how waters on the Planning List will be prioritized for monitoring.
Surface waters and pollutants still requiring TMDLs	Chapter V and Appendix D identify all assessed waters according to five categories and indicate the pollutant(s) of concern. Category 5 indicates impaired waters requiring a TMDL.
TMDL development schedules reflecting the priority ranking of each surface water and/or pollutant combination.	Chapter V, Table 27 identifies the priority ranking and a schedule for completing TMDLs for each pollutant impairing a surface water.
A description of the assessment and listing methodology used to develop Clean Water Act section 303(d) Lists and section 305(b) Assessments.	Chapter III describes the assessment and listing methods used. Appendix B provides a copy of the Impaired Waters Identification Rules and Arizona's statute concerning the listing process and TMDL development.
A description of the public participation process involved in developing the 303(d) list.	The public participation process is described in Chapter V.

In accordance with EPA's November 2001 guidance, Arizona has made a number of structural changes in how it identifies categories of surface waters. EPA guidance suggests that surface waters be placed on the following five-part list of surface waters depending on the sufficiency of data and number of exceedances as defined in Arizona's assessment and listing methods (see discussion in Chapter III).

- Part 1. Surface waters where all water quality standards are being attained.
- Part 2. Surface waters are attaining some designated uses but there is insufficient data to assess the remaining uses. Surface waters assessed as "threatened" are included in this part.
- Part 3. Surface waters with insufficient data to assess any designated use.
- Part 4. Surface waters are assessed as "not attaining" one or more designated use but a Total Maximum Daily Load (TMDL) analysis will not be required for one of the following reasons:
 - 4 A. A TMDL has already been completed and approved by EPA but the water quality standards are not yet being attained.
 - 4 B. Other pollution control requirements are reasonably expected to result in the attainment of water quality standards by the next regularly scheduled listing cycle.
 - 4 C. The impairment is not related to a "pollutant" loading but rather caused by "pollution" (e.g., hydrologic modification).
- Part 5. Surface waters are impaired for one of more designated uses by a pollutant and require development of a TMDL.

Note that Arizona is including "threatened" waters in Part 2 rather than Part 5 until federal regulations clarify whether "threatened" waters must be included on the 303(d) List of impaired waters. Assessment criteria are described in Chapter III. Chapter V relates these five categories to monitoring priorities.

New state statutes and impaired waters identification rules take hold.

Since the last assessment report was issued in 2000, new state statutes and regulations have been adopted which regulate the identification of impaired waters and the prioritization and completion of Total Maximum Daily Load (TMDL) analyses.

A Total Maximum Daily Load Analysis (TMDL)

A TMDL is a written, quantitative plan and analysis to determine the maximum loading on a pollutant basis that a surface water can assimilate and still attain and maintain a specific water quality standard during all conditions. The TMDL allocates the loading capacity of the surface water to point sources and nonpoint sources identified in the watershed, accounting for natural background levels and seasonal variation, with an allocation set aside as a margin of safety.

New State Statutes -- In 2000, Arizona Revised Statute Title 49, sections 231-238 was adopted (**Appendix B**), establishing requirements for identifying impaired waters which require TMDL analyses and for development of TMDLs. For 303(d) listing decisions, the statute requires that ADEQ:

- Adopt, by rule, the methods used to identify “impaired” waters;
- Use only reasonable current credible and scientifically defensible data;
- Consider the nature of the water (e.g., ephemeral, intermittent, or perennial) in assessing whether a surface water is impaired;
- Determine whether pollutant loadings solely from naturally occurring conditions are sufficient to exceed a water quality standard, and if so the surface water is not listed as “impaired”;
- Must adopt narrative implementation procedures through a public process before using narrative standards to identify impaired waters. These procedures must identify the objective basis for determining a narrative or biological standard violation; and
- Review all surface waters on the current 303(d) List (approved 1998) to determine whether the data fulfills requirements established in the new impaired waters identification rules (credible and sufficient data requirements, etc.). If the data used to list the water or more current data do not meet the requirements of the new rule, ADEQ cannot place the surface water on the 2002 303(d) List.

New Impaired Waters Identification Rules -- ADEQ developed Impaired Waters Identification Rules (R18-11-601 through R18-11-606) (**Appendix B**) as required in the state statute discussed above. These rules establish the following:

- “Credible data” criteria;
- Data submission and record keeping;
- General data interpretation requirements;
- Criteria for placing a surface water on the Planning List for further monitoring;
- Criteria for identifying surface waters as impaired and placing it and identified pollutants on the 303(d) List;
- Criteria for removing a pollutant or surface water from the 303(d) List; and
- Criteria for prioritizing the 303(d) listed waters for TMDL development.

Changes in the assessment process

In previous water quality reports, ADEQ assessed surface waters using one set of assessment criteria, and then applied a separate set of criteria to determine which surface waters merited being identified as “impaired” and included on the 303(d) List. This was a two-step process that allowed ADEQ to do “evaluated” assessments based on limited monitoring data and screening values for narrative standards (e.g., contaminated sediment, fish kills, fish tissue contamination). In many cases the data was insufficient to support a 303(d) listing. However, using two sets of criteria has been confusing to the public. To eliminate this confusion and to follow new EPA guidance on consolidating the two processes, ADEQ merged the assessment and 303(d) listing criteria so that any surface water assessed as “impaired” will be included on the 303(d) List.

A desire to minimize potential erroneous assessments has also resulted in several significant changes in the monitoring, assessment, and the 303(d) listing process. The amended monitoring program is discussed in Chapter VII and the new assessment and listing process is discussed in Chapters III and V in more detail. The most significant changes in the process are:

- All data used for assessments must meet “credible data” requirements established in the Impaired Waters Identification Rule.
- Instead of assessing a surface water as in “full,” “full but threatened,”

“partial,” or “non-support” of its designated uses, a surface water is assessed as either “attaining,” “impaired,” “not attaining,” or “inconclusive.”

- Instead of a minimum of two samples, adequate data for assessments must meet the following requirements:
 - < To assess as “attaining” uses, collect samples at a minimum of three (3) monitoring events that provide seasonal representation and core parametric coverage for the designated uses assigned to that surface water; or
 - < To assess as “impaired,” collect a sufficient number of samples to meet the test of impairment identified in the Impaired Waters Identification Rule.
- To apply narrative standards to the listing process, state statute requires that the Department must first adopt narrative implementation procedures for each narrative standard through a public process. ADEQ is still in the process of developing these documents, and therefore, was not able to list any surface water as impaired solely on the basis of narrative standard violations.